

## IS THE OVERFILLING OF PULP CANALS A SAFE PROCEDURE?

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(Read before the 1917 Annual Meeting of the National Dental Association.)

TO COMMENT on the overfilling of pulp canals by the great body of dentists a few years ago would have been unheard of, but within the past three years a peculiarly significant restlessness, gradually taking on the form of a widespread desire to do better work, has made its appearance. The development of the movement that followed, and the direction of its activities were the result, not of outside agitation, but of extensive and impartial self-analysis, a determined searching for the truth, and a firm resolve to correct mistakes made in the past and prevent their recurrence. This movement is growing so rapidly that we must now prepare for future contingencies. Hence, your essayist feels that a discussion of this subject is in reality not premature.

Pulp canals are being opened farther and farther each year until now we are getting close to the end, and many of them when filled, show that the filling slipped thru. Not because the operator in all cases tried to accomplish such results, but rather because of the fact that our improved instruments and technic have made such a thing possible in the hands of the majority of men who honestly and intelligently try. It is done, not from design, but because it was apparently unavoidable.

Altogether too many times pulp canal operations are considered of purely mechanical procedure and the limit of responsibility lies at the apical point of

canal filling. The main question is, "Is it filled?" We never seem to get over feeling a thrill of pride when our Radiograph shows the canal filling reaching the apex and possibly appearing on the cementum. We know this to be so, we also know how infrequently when we examine our Radiograph showing such an operation, that we ask ourselves the question, "Will this case show subsequent infection?"

So we have fought our way thru the pulp canal question, from the time when we thought, or hoped that the apex of each root was not over a quarter of an inch from the floor of the pulp chamber, that is, we knew in extracted teeth the roots are longer, but somehow or other, we cherished the hope that in the mouth, that just for once, and that at the time we were filling them that they would be "oh so short" and that surely we reach the apex when filling, for remember we all tried to practice good dentistry and "do the best we could by our patients" Then we pass on up to the time when we finally discovered ways and means of actually opening some of the "inaccessible" canals. Then came the time when we began to X-ray all these pulpless teeth and we never had any idea that so many other dentists had filled root-canals for our patients, positively it was unbelievable. Then we got over that spasm and each man decided to claim his own and get down to work, and here we are today, plowing

ahead, rapidly approaching that apex, for mind you, the hidden part of dentistry is becoming more thoro and more understood.

Now, before we finally emerge from the pulp canal thru the multiple foramina, just let us do a little experimenting. There is a solemn warning right here. We have arrived at the point where a tremendous amount of damage may be done and doubtless is being done.

Let us go into our laboratory, select a tooth, open the canals, do the work as we do in the mouth. Underfilled and overfilled roots show absorbed periapical areas. Deducting the cases where infection occurred previous to the root-canal operation, these being probably about evenly divided, we find that we have a large percentage of cases where we must explain how it happened that we have these areas of infection. Anyone who has done laboratory experimentation on extracted teeth, must realize that, after the work ordinarily done in opening and cleansing a canal, such a canal as a general rule is not even ordinarily clean, and now comes the danger of overfilling. *With such debris in the canal, by our modern method which pumps and drives the canal filling up to and thru the foramin, we succeed in forcing the unremoved contents of the canal thru into the periapical tissues, along with the filling material.*

Here is one of our gravest dangers in overfilling of canals, and there is so much for you to consider on this point alone, in view of the fact that in overfilling we may actually force into the patient's system, some material we would not if we knew, that, your essayist is going to leave the question for each one to settle for himself. During your instrumentation in the laboratory watch that apex and see what we poke thru, especially as we operate in the apical portion. Then let us fill the root, and as we work the canal filling into the canal and thru the apex scrutinize carefully, and behold

what has passed thru with the filling material.

This reference is of course to macroscopic material only. How about microorganisms? How about drugs that destroy living tissues? Let us stop and consider this for a little while. We may in some cases safely carry our canal filling thru the apex, *but let us be careful of the company it keeps.* An examination of several thousand films makes it conclusively apparent that it is not solely a mechanical problem, but also one of surgical cleanliness. If you feel that this is a point worthy of your consideration and you have now decided to go home and investigate the problem and like the boy who investigated and found out about this "Santa Claus business," you may find out that accepting some other person's word for it may not be an accurate means of locating the truth. In consequence, from now on each of us will do a little looking around for himself.

From the foregoing you may easily infer that your essayist has not established the point at which all his canal fillings terminate: the reason being that they vary so in their willingness to stop where we want them. It is my positive belief that from radiographic evidence at least a root-canal filling can be called satisfactory even tho it does not appear on the cementum when examined with the X-ray. In contradistinction it might also be said that the operator, who, with a drill in the engine, plunges blindly into a canal; stopping only when the patient informs him that he is thru the root, in order that his film may show a canal filling reaching the apex, is not doing serviceable pulp canal work. He is playing to the gallery—I submit to you this proposition: We should not be satisfied with our present operation. It is not altogether satisfactory, hence we should not rest on our oars, but must drive ahead for we are going to succeed. Your essayist is so confident that success will be ours that he is putting more

and more time on this problem with the hope that very soon the problem will be solved.

Now let us pass on to another vitally important problem. Medicine and Dentistry have in the past on a few occasions, come very close to one another, but they never quite found conditions such that in pursuing their normal activities they discovered that they were in reality traveling side by side.

Dentistry has surely some time since passed from the limitations of mechanics with which for years she was surrounded, and with the branching out of the Orthodontist, the Oral Surgeon, the Pyorrhea and Root-Canal Specialist, the Exodontist, the Children's Specialist, the Prophylactician and the Radiodontist we have so thrust our work into, around and between that of our medical co-workers that our relations have been very intimate. And now comes the grandest chance we have ever had to cement this relationship. It is in "Oral Examination and Diagnosis."

Just what do we mean by this? We have examined mouths for years. Yes. The first experience we generally get along this line is in the examination room at College, where the mouths of infirmity patients are examined. We were taught (I understand it is all different now) that we must look carefully for cavities, missing teeth, pyorrhea, and "fill" any roots that were not already stopped with Gutta-Percha. Alas! many of us carry this idea yet, and when we are asked to make an examination we assume that this is what is wanted, and we serenely pass over the greatest opportunity the dental profession ever had to put itself on record as being something more, so much more, than a profession all absorbed in mechanics.

So at this time it is your essayist's desire to make a little contribution to dentistry and tell you how we examine a mouth and how the fate of the various teeth is decided. It is accompanied

with a friendly suggestion of danger ahead if we overlook or shirk our duty, and a plea that some such system be adopted and put into actual use. Do not overlook your opportunity. It is still time to take this step voluntarily. What the future will be no one can tell, the great war has discouraged prophesying.

As we begin this examination, let me draw your attention to the fact that most people have from one to as high as fifteen or more pulpless teeth in their mouths? In view of the fact that until recently a very large percentage of the pulpless teeth were infected, the staggering possibilities in this connection must alarm even the most indifferent.

In the advocating of complete oral examinations of our patients' mouths, in order that we may know where to begin, we must expect to encounter the same opposition that we have in establishing thoro root-canal work as routine procedure, but it is the next step we must take in dentistry.

If patient's mouths were in ideal health we would not have a great deal to do for them, but unfortunately for them they show various degrees of disease, and we are confronted with the problem of bringing these mouths up to as high a degree of perfection as we possibly can. We can reconstruct the masticating apparatus of the patient along purely mechanical lines. That is, on apparently sound teeth we build possibly wonderful restorative structures and give the patient something to masticate with, and there our effort ends. Or on the other hand, we can practice dentistry from the health standpoint. By this we mean that everything that is in that patient's mouth when we finish is placed there or has been allowed to remain there because it is conducive to good health. We will not discuss in this paper the ways and means of getting rid of infected areas around root ends; only one thing we must decide and that

is that these areas must go, we must thoroly clean them up.

In this connection your essayist wants to make a plea for the standardization of X-ray diagnosis, so that there will be a little more similarity in the way in which these films are interpreted. Dentistry has been able to advance by means of the use of the X-ray, but if some instances which have come under my observation should be of frequent occurrence, it will not redound to the glory and uplifting of the dental profession, but will tend to make it ridiculous.

In closing, your essayist wishes to take advantage of this opportunity to thank his professional friends from whom he has from time to time received valuable information and lasting inspirations, and that while we all make mistakes, yet ours are not more numerous or any more serious than those of the members of any other profession. And lastly, on thinking it all over and realizing that it is the year 1917 with all its opportunitites, he can say with honesty and sincerity, that he is proud to belong to the dental profession.

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## DENTAL AND ORAL HYGIENE IN RELATION TO PUBLIC HEALTH.

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**By Louis Ottofy, D. D. S., M. D., Manila, Philippine Islands.**

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(Read before the meeting of the Philippine Islands Medical Association and the IV Asamblea Regional de Medicos y Farmaceuticos de Filipinas, Manila, February 8, 1918.)

**F**OR one who is familiar with the progress of dentistry for more than a third of a century, it is gratifying to note the gradually increasing appreciation of the service of dentistry on behalf of humanity. A definite status of the worth of the dental profession has recently been established by the Congress of the United States, in a law which places the members of the dental profession in the United States Army, on an equal plane with members of the medical profession.

A certain recognition is also apparent here in the Philippine Islands, by members of these Associations now in session. I notice that three of the papers to be read before this body are directly concerned with dentistry, and with the dis-

coveries made by dentists in the interest of science.

In some respects it is remarkable that the influence of dental and oral hygiene on the general health, should have been so long without proper recognition and appreciation. When we reflect for a moment, that all food designed for the upbuilding of the system must pass thru the oral portal, and when we note our knowledge concerning parasites and bacteria, and knowing that the constant habitat of many species is in the oral cavity, it seems little short of marvelous that most earnest attention has not been directed to the subject a long time ago.

The recent recognition of focal infection as the result of diseases the teeth and their adnexa has forcibly directed